

S1 1 GLUTAMIC(W)ACID(W)DECARBOXYLASE

1/5/1

CAS REGISTRY NUMBER: 9024-58-2
MOLECULAR FORMULA: W99
REPLACED CAS REGISTRY NUMBER(S) : 9024-56-0 9024-71-9 72750-60-8

CA NAME(S):

HP-Decarboxylase (9C)

SB=glutamate

SYNONYM(S): gamma-Glutamate decarboxylase; Aspartate 1-decarboxylase; Aspartic .alpha.-decarboxylase; Cysteic acid decarboxylase; E.C. 4.1.1.11; E.C. 4.1.1.15; Glutamate decarboxylase; Glutamic acid decarboxylase; Glutamic decarboxylase; L-Aspartate- α -decarboxylase; L-Glutamate α -decarboxylase; L-Glutamate decarboxylase; L-Glutamic acid decarboxylase; L-Glutamic decarboxylase; 1-Glutamic acid decarboxylase

SUBFILE: CHEMNAME 1972 LITERATURE REFERENCE(S) IN FILE 399.

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4/7/2 (Item 2 from file: 155) 07728209 91248209

Cloning and partial nucleotide sequence of human glutamic acid decarboxylase cDNA from brain and pancreatic islets.

Cram DS; Barnett LD; Joseph JL; Harrison LC

Burnet Clinical Research Unit, Walter and Eliza Hall Institute of Medical Research, Parkville, Victoria, Australia.

Biochem Biophys Res Commun (UNITED STATES) May 15 1991, 176 (3) p1239-44, ISSN 0006-291X Journal Code:

9Y8 Languages: ENGLISH Document type: JOURNAL ARTICLE

We report partial nucleotide sequences of the human enzyme glutamic acid decarboxylase (GAD) from brain and pancreatic islets which encode the middle 180 amino acids of GAD. The brain and islet GAD sequences display a high degree of sequence homology with the equivalent region of other mammalian brain GAD cDNAs. Alignment of the brain and islet GAD sequences showed that there were 45 nucleotide differences which, at the translational level would result in seven amino acid substitutions.

These results which suggest that different isomeric forms of human GAD exist in brain and pancreas may be relevant to the pathogenesis of stiff man syndrome (SMS) and insulin-dependent diabetes mellitus (IDDM), respectively, two distinct but associated clinical disorders in which GAD is the target of autoantibodies.

4/6/3 (Item 3 from file: 155) 07568649 91087649

Is there no role for heat-shock protein in diabetes? [letter]

4/6/4 (Item 4 from file: 155) 07561170 91080170

Prokaryotic and eukaryotic pyridoxal-dependent decarboxylases are homologous [letter]

4/7/5 (Item 5 from file: 155) 07527023 91046023

Molecular cloning and amino acid sequence of brain L-glutamate decarboxylase.

Huang WM; Reed-Fourquet L; Wu E; Wu JY

Department of Cell Biology, Baylor College of Medicine, Houston, TX 77030.

Proc Natl Acad Sci U S A (UNITED STATES) Nov 1990, 87 (21) p8491-5, ISSN 0027-8424 Journal Code: PV3

Contract/Grant No.: NS20978; EY05385 Languages: ENGLISH Document type: JOURNAL ARTICLE

We used specific polyclonal antibodies against L-glutamate decarboxylase (GAD) to screen a mouse brain cDNA library that was constructed in the expression vector lambda gt11. We obtained 1.5 x 10⁶ recombinant DNA clones in the mouse brain cDNA library. One of the clones was positively identified as a GAD clone on the basis of the following results: (i) the clone and its secondary and tertiary clones all reacted strongly with anti-GAD antibodies; (ii) the fusion protein obtained from lambda

GAD-Y1089 showed good GAD enzyme activity as determined by both Co2 and gamma-aminobutyric acid methods. The GAD clone thus obtained contains GAD cDNA of approximately 2.6 kilobases that has one internal EcoRI site. After GAD cDNA was

cut at the EcoRI site, two DNA fragments of about 1.6 and 1.0 kilobases were obtained at the 5' and 3' ends, respectively. The

cDNA insert was found to be composed of 2632 base pairs, the translation initiation site was assigned to the methionine codon ATG, and the termination site was found to be TGA (positions 2216-2218). Furthermore, the coding region in 2169 base pairs was found

to consist of 773 amino acids. The protein has a molecular weight of 83,207 and contains 83 strongly basic, 108 strongly acidic, 226 hydrophobic, and 221 polar amino acids with an isoelectric point of 5.355. The relationship of this GAD cDNA to other forms of

GAD is discussed.

COPY OF PARENT SEARCH

Neuroscience Program, University of California Los Angeles 90024.
Neuron (UNITED STATES) Jul 1991, 7 (1) p91-100, ISSN 0896-6273
Journal Code: AN8 Languages: ENGLISH Document type: JOURNAL ARTICLE

gamma-Aminobutyric acid (GABA) is the most widely distributed known inhibitory neurotransmitter in the vertebrate brain. GABA also serves regulatory and trophic roles in several other organs, including the pancreas. The brain contains two forms of the GABA synthetic enzyme glutamate decarboxylase (GAD), which differ in molecular size, amino acid sequence, antigenicity, cellular and subcellular location, and interaction with the GAD cofactor pyridoxal phosphate. These forms, GAD65 and GAD67, derive from two genes. The distinctive properties of the two GADs provide a substrate for understanding not only the multiple roles of GABA in the nervous system, but also the autoimmune response to GAD in insulin-dependent diabetes mellitus.

Two genes encode distinct glutamate decarboxylases.

Erlander MG; Tillakaratne NJ; Feldblum S; Patel N; Robins AJ

4/7/1 (item 1 from file: 155) 07780343 91299343

Two genes encode distinct glutamate decarboxylases.

Characterization of a cDNA coding for rat glutamic acid decarboxylase.

Wyborski R; Bond RW; Gottlieb DJ

Department of Anatomy and Neurobiology, Washington School of Medicine, St. Louis, MO 63310.

Brain Res Mol Brain Res (NETHERLANDS) Aug 1990, 8 (3) p193-8, ISSN 0169-328X Journal Code: MBR

Contract/Grant No.: NS-2867-12 Languages: ENGLISH Document type: JOURNAL ARTICLE
cDNA clones have been isolated for rat glutamic acid decarboxylase (glutamate decarboxylase, EC 4.1.1.15) (GAD) and 3216 bp of the sequence have been determined. This sequence extends the previously reported feline GAD cDNA sequence both in the 5' (67 bp) and 3' (887 bp) directions and contains the polyadenylation signal and tail. The cDNA codes for a 67 kDa mol. wt. protein beginning from the putative initiator methionine found in the feline sequence. Extensive homology is high compared to other neurotransmitter synthesizing enzymes and suggests selective pressure to maintain the primary sequence throughout the full length of the protein. Homology is found 5' to the putative initiator methionine. Extensive stretches of homology are also found in the 3' non-coding region. These conserved non-coding regions may play a role in GAD mRNA regulation. The rat cDNA sequence will facilitate investigations into the structure and regulation of the GAD gene.

4777 (Item 7 from file: 155) 07248291 90155291

Drosophila GABAergic systems: sequence and expression of glutamic acid decarboxylase.

Jackson FR; Newby LM; Kulkarni SJ
Worcester Foundation for Experimental Biology, Shrewsbury, MA 01545.

J Neurochem Mar 1990, 54 (3) p1068-78, ISSN 0022-3042
Journal Code: JAV Contract/Grant No.: NS25914 Languages: ENGLISH

A mammalian glutamic acid decarboxylase (GAD) cDNA probe has been utilized to isolate Drosophila cDNA clones that represent a genomic locus in chromosome region 3A. Deletion analysis indicates that this chromosomal locus encodes an enzymatically active GAD protein. The in vitro translation of mRNA representing a Drosophila cDNA clone yields a 57-kDa protein that can be immunoprecipitated by an anti-GAD antiserum. A GAD-immunoreactive protein of the same size can also be detected in Drosophila head extracts. The nucleotide sequence derived from two overlapping Drosophila cDNA clones predicts a 57,759-dalton protein composed of 510 residues that is 53% identical to mammalian GAD. Sequence comparisons of mammalian and Drosophila GAD identify two highly conserved regions (greater than or equal to 70% identity), one of which encompasses a putative co-factor-binding domain. Transcriptional analyses show that expression of the Drosophila *Gad* gene commences early in embryonic development (4-8 h) and continues in all later developmental stages. A 3.1-kb class of mRNA is detected throughout embryogenesis, in all three larval stages, in pupae, and in adults. This transcript class has a widespread distribution in the adult CNS. A smaller 2.6-kb transcript is expressed in a developmentally regulated manner; it is detected only in embryos and pupae.

4778 (Item 8 from file: 155) 07245672 90152672
Sequences homologous to glutamic acid decarboxylase cDNA are present on mouse chromosomes 2 and 10 [published erratum appears in Genomics 1990 Apr;6(4):708]

Brilliant MH; Szabo G; Katarova Z; Kozaik CA; Glaser TM; Greenspan RJ; Housman DE
Jackson Laboratory, Bar Harbor, Maine 04609.

Genomics Jan 1990, 6 (1) p115-22, ISSN 0888-7533 Journal Code: GEN Languages: ENGLISH

The chromosomal locations of mouse DNA sequences homologous to a feline cDNA clone encoding glutamic acid decarboxylase (GAD) were determined. Although cats and humans are thought to have only one gene for GAD, GAD cDNA sequences hybridize to two distinct chromosomal loci in the mouse, chromosomes 2 and 10. The chromosomal assignment of sequences homologous to GAD cDNA was determined by Southern hybridization analysis using DNA from mouse-hamster hybrid cells. Mouse genomic sequences homologous to GAD cDNA were isolated and used to determine that GAD is encoded by a locus on mouse chromosome 2 (*Gad-1*) and that an apparent pseudogene locus is on chromosome 10 (*Gad-1ps*). An interspecific backcross and recombinant inbred strain sets were used to map these two loci relative to other loci on their respective chromosomes. The *Gad-1*

locus is part of a conserved homology between mouse chromosome 2 and the long arm of human chromosome 2.

4779 (Item 9 from file: 155) 07225703 90132703

Rat brain glutamic acid decarboxylase sequence deduced from a cloned cDNA.

Julien JF; Samama P; Mallet J

Laboratoire de Neurobiologie Cellulaire et Moléculaire, Centre National de la Recherche Scientifique, Gif-sur-Yvette, France.

J Neurochem (UNITED STATES) Feb 1990, 54 (2) p703-5, ISSN 0022-3042 Journal Code: JAV Languages: ENGLISH
A cDNA clone complementary to the rat brain glutamic acid decarboxylase mRNA was isolated from a rat brain cDNA expression library using an antibody specific to the enzyme. The cDNA insert has been shown to direct the synthesis of an active protein in *Escherichia coli*. In this study, the nucleotide sequence of this clone, which includes the complete coding region, is presented. The predicted protein is 593 amino acids in length. The first 557 residues display a 95% identity when compared with the corresponding cat sequence. However, the deduced amino acid sequence of the carboxy-terminal end of the rat protein, downstream of residue 557, is totally different from the cat, whereas it agrees with a published partial peptidic sequence of the rat protein.

47710 (Item 10 from file: 155) 06900373 89202373

Molecular cloning and analysis of cDNA encoding a plant tryptophan decarboxylase: comparison with animal dopa decarboxylases.

De Luca V; Marinneau C; Brisson N
Plant Biotechnology Institute, National Research Council of Canada, Saskatoon.

Proc Natl Acad Sci U S A Apr 1989, 86 (8) p2582-6, ISSN 0027-8424
Journal Code: PV3 Languages: ENGLISH

The sequence of a cDNA clone that includes the complete coding region of tryptophan decarboxylase (EC 4.1.1.28, formerly EC 4.1.2.7) from periwinkle (*Catharanthus roseus*) is reported. The cDNA clone (174 base pairs) was isolated by antibody screening of a cDNA expression library produced from poly(A)+RNA found in developing seedlings and from young leaves of mature plants. The identity of the clone was confirmed when extracts of transformed *Escherichia coli* expressed a protein containing tryptophan decarboxylase enzyme activity. The tryptophan decarboxylase cDNA clone encodes a protein of 500 amino acids with a calculated molecular mass of 56,142 Da. The amino acid sequence shows a high degree of similarity with the aromatic L-amino acid decarboxylase (dopa decarboxylase) and the alpha-methyldopa-hypersensitive protein of *Drosophila melanogaster*. The tryptophan decarboxylase sequence also showed significant similarity to feline glutamate decarboxylase and mouse ornithine decarboxylase, suggesting a possible evolutionary link between these amino acid decarboxylases.

47711 (Item 11 from file: 155) 06613610 88258610

Characterization of the proteins purified with monoclonal antibodies to glutamic acid decarboxylase.

Chang YC; Gottlieb DJ

Department of Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, Missouri 63110.

J Neurosci Jun 1988, 8 (6) p2123-30, ISSN 0270-6474 Journal Code: JDJ
Contract/Grant No.: NS-2867 Languages: ENGLISH

Immunoaffinity columns are prepared from the monoclonal antibody (MAB) GAD-1. These columns are used to enrich glutamic acid decarboxylase (GAD) from the cytosolic fraction of rat brain homogenates and from Triton X-100 extracts of the brain membrane fraction. In each case enzyme activity is enriched over 400-fold. The immunopurified fractions were analyzed by SDS-PAGE. Fractions purified from the cytosol consisted of a quantitatively major band of 59 kDa, and one band of 63 kDa, as well as a group centered around 55 kDa. Fractions purified from membranes consisted primarily of the 59 and 63 kDa components; only traces of the lower-molecular-weight components were present. The entire set of proteins purified on GAD-1 immunoaffinity columns is strongly recognized by 2 widely used antisera to GAD, those described in Saito et al. (1974) and Oertel et al. (1981). The 59 kDa protein from the cytosolic fraction was purified to homogeneity by preparative SDS-PAGE; a partial amino acid sequence of this protein was obtained. The 59 kDa protein has a high degree of sequence homology with the deduced

amino acid sequence of the protein that was coded for by a cDNA for feline GAD (Kaufman et al., 1986; Kobayashi et al., 1987). Thus, these proteins are either products of a single gene that diverged during the evolution of rat and cat from a common ancestor, or are members of a closely related set of genes found in both species. The MAB GAD-6 recognizes the 59 kDa band and the group of bands centered around 55 kDa on Western blots. Therefore, these proteins are immunohistochemically related. GAD-6 does not recognize the 63 kDa band. In Western blots of unfractionated homogenates of the whole brain, the only band recognized by GAD-6 is a 59 kDa band.(ABSTRACT TRUNCATED AT 250 WORDS)

4/6/12 (Item 12 from file: 155) 06434351 88079351

Temporal sequence of motor disturbances and increased cerebellar glutamic acid decarboxylase activity following 3-acetylpyridine lesions in adult rats.

4/7/13 (Item 13 from file: 155) 06330623 87310623

Glutamic acid decarboxylase cDNA: nucleotide sequence encoding an enzymatically active fusion protein.

Kobayashi Y.; Kaufman DL; Tobin AJ
J Neurosci Sep 1987, 7 (9) p2768-72, ISSN 0270-6474 Journal Code: JDF Contract/Grant No.: NS 22256; NS 20356; PO1 NS 21908; + Languages: ENGLISH

Glutamic acid decarboxylase (GAD;EC. 4.1.1.15) catalyzes the production of GABA, the major inhibitory neurotransmitter in the mammalian brain. We recently isolated a lambda gt-11 recombinant, lambda-GAD, that contains the cDNA for GAD from feline brain (Kaufman et al., 1986). Interestingly, the beta-galactosidase-GAD fusion protein encoded by lambda GAD is enzymatically active, catalyzing the conversion of glutamate to CO₂ and GABA. Here we report the nucleotide sequence of feline GAD cDNA. It consists of 2265 bases, with a continuous open reading frame of 625 codons. The derived sequence contains the sequence Asn-Pro-His-Lys, which is identical to sequence at the pyridoxal phosphate-binding site of porcine DOPA decarboxylase (Bossa et al., 1977). The first ATG sequence in the open reading frame begins at nucleotide residue 118. The 585 codons 3' to this putative initiation site predict an amino acid composition, N-terminal residue, and molecular size consistent with published characterizations of GAD.

4/6/14 (Item 14 from file: 155) 06007109 88308109

Regional distribution of messenger RNAs in postmortem human brain.

4/6/15 (Item 15 from file: 155) 04790085 83023085

Chemistry of the inactivation of cytosolic aspartate aminotransferase by serine O-sulfate.

4/6/16 (Item 16 from file: 155) 04605844 82148844

Excitatory amino acid analogs: neurotoxicity and seizures.

4/7/17 (Item 1 from file: 73) 7736341 EMBASE No: 90166607

Erratum: Sequences homologous to glutamic acid decarboxylase cDNA are present on mouse chromosomes 2 and 10 (Genomics, (1990) 6 (115-122))

Brilliant MH.; Szabo G.; Katarova Z.; Kozak C.A.; Glaser T.M.; Greenspan R.J.; Housman D.E.
GENOMICS (USA), 1990, 6/4 (708) CODEN: GNMCE ISSN: 0888-7563 LANGUAGES: English

4/7/18 (Item 1 from file: 357) 123715 DBA Accession No.: 91-11357 PATENT

Isolated DNA encoding aspartate-beta-decarboxylase - application to improved production of L-lalanine from L-aspartate and D-aspartic acid from D,L-aspartic acid

PATENT ASSIGNEE: Genetics-Inst. 1991

PATENT NUMBER: US 5019509 PATENT DATE: 9/10/28 WPI ACCESSION NO.: 91-177517 (9124)

PRIORITY APPLIC. NO.: US 183860 APPLIC. DATE: 8/8/420

NATIONAL APPLIC. NO.: US 183860 APPLIC. DATE: 8/8/420 LANGUAGE: English

ABSTRACT: An isolated DNA sequence encoding aspartate-beta-decarboxylase (I) and being free from a nucleotide sequence

encoding another enzyme, is claimed. The following are also claimed: a vector containing the DNA operably linked to an expression control sequence; and a transformed microorganism host. The productivity of (I) was calculated as 927 g-L-alanine/l catalyst/bed hr. (I) is useful for the production of L-alanine from L-aspartate. The recombinantly-produced enzyme is more efficient than the wild-type enzyme. Use of (I) excludes alanine-racemase (EC-5.1.1.1) activity and obviates pretreatments prior to catalytic use. (I) may also be used for the production of mixtures containing D-aspartic acid and L-alanine by its action of D,L-aspartic acid. The products of (I) conversions may optionally contain radioactive or non-radioactive isotope labels. (14p)

4/6/19 (Item 2 from file: 357) 077227 DBA Accession No.: 88-08076

Nucleotide sequence of the lysA gene of *Corynebacterium glutamicum* and possible mechanisms for modulation of its expression - meso-dihydrodipropionate-decarboxylase gene expression

11/6/1 (Item 1 from file: 155) 07740194 91259194

Differential gene expression for glutamic acid decarboxylase and type II calcium-calmodulin-dependent protein kinase in basal ganglia, thalamus, and hypothalamus of the monkey.

11/6/2 (Item 2 from file: 155) 07713384 91232384

Calcium binding protein (calbindin-D28k) and glutamate decarboxylase gene expression after kindling induced seizures.

11/6/3 (Item 3 from file: 155) 07703561 91222561

Cerebellar granule cell neurogenesis is regulated by cell-cell interactions in vitro.

11/6/4 (Item 4 from file: 155) 07692833 91211833

Co-expression of neuropeptides in the cat's striatum: an immunohistochemical study of substance P, dynorphin B and enkephalin.

11/6/5 (Item 5 from file: 155) 07633895 91142895

Differential effects of intraventricular colchicine administration on the expression of mRNAs for neuropeptides and neurotransmitter enzymes, with special emphasis on galanin: an in situ hybridization study.

11/6/6 (Item 6 from file: 155) 07619891 91136991

Striatal GABA, dynorphin, substance P and neuropeptide A modulation of nigrostriatal dopamine release: evidence for direct regulatory mechanisms.

11/6/7 (Item 7 from file: 155) 07604946 91123946

The role of afferent activity in the maintenance of primate neocortical function.

11/6/8 (Item 8 from file: 155) 0754752 91093752

Differential effects of monocular deprivation on glutamic acid decarboxylase and type II calcium-calmodulin-dependent protein kinase gene expression in the adult monkey visual cortex.

11/6/9 (Item 9 from file: 155) 07554434 91073434

Lurcher Purkinje cells express glutamic acid decarboxylase and calbindin mRNAs.

11/6/10 (Item 10 from file: 155) 07543362 91062362

Developmentally regulated expression of an exon containing a stop codon in the gene for glutamic acid decarboxylase.

11/6/11 (Item 11 from file: 155) 07448866 90355986

Expression of the neurotransmitter-synthesizing enzyme glutamic acid decarboxylase in male germ cells.

11/6/12 (Item 12 from file: 155) 07427011 90334011
Developmental regulation of myelin-associated genes in the normal and the myelin deficient mutant rat.

11/6/13 (Item 13 from file: 155) 0738720 90294720
Distribution of messenger RNAs encoding the enzymes glutaminase, aspartate aminotransferase and glutamic acid decarboxylase in rat brain.

Expression of neuronal markers in chick and quail embryo neuroretina cultures infected with Rous sarcoma virus.

11/6/26 (Item 26 from file: 155) 04557175 82100175
Glutamic acid decarboxylase and gamma-aminobutyric acid in Huntington's disease fibroblasts and other cultured cells, determined by a β H-thiouridine radioreceptor assay.

11/6/14 (Item 14 from file: 155) 07337862 90244862
Increased expression of glutamic acid decarboxylase mRNA in rat substantia nigra after an ibotenic acid lesion in the caudate-pulamen.

11/6/15 (Item 15 from file: 155) 07259559 90166559
The abnormal cerebellar organization of Weaver and reeler mice does not affect the cellular distribution of these neuronal mRNAs.

11/6/16 (Item 16 from file: 155) 0726113 90033113
Region specific regulation of glutamic acid decarboxylase mRNA expression by dopamine neurons in rat brain.

11/6/17 (Item 17 from file: 155) 07011190 89313190
Expression of glutamic acid decarboxylase mRNA in normal and monocularly deprived cat visual cortex.

11/6/18 (Item 18 from file: 155) 06958945 89260945
Amygdaloid kindling of rats increases preprosomatostatin mRNA and somatostatin without affecting glutamic acid decarboxylase (GAD) mRNA or GAD.

11/6/19 (Item 19 from file: 155) 06558675 88203675
Pattern of expression of glutamic acid decarboxylase mRNA in the developing rat brain.

11/6/20 (Item 20 from file: 155) 06298616 87272616
The morphogenesis of glutamic acid decarboxylase in the neostriatum of the cat: neuronal and ultrastructural localization.

11/6/21 (Item 21 from file: 155) 06213665 87187665
Differentiation of retrovirus-infected avian neuromelia cells.

11/6/22 (Item 22 from file: 155) 06212807 87188507
Brain neurons develop in a serum and glial free environment: effects of transferrin, insulin, insulin-like growth factor-I and thyroid hormone on neuronal survival, growth and differentiation.

11/7/23 (Item 23 from file: 155) 06171244 87145244
Molecular cloning, expression and in situ hybridization of rat brain glutamic acid decarboxylase messenger RNA.

Julien JF; Legay F; Dumais S; Tappaz M; Mallet J
Neurosci Lett Jan 14 1987; 73 (2) p173-80, ISSN 0304-3940 Journal Code: N7N Languages: ENGLISH

A cDNA library was generated in the expression vector lambda GT11 from rat brain poly(A)+RNAs and screened with a GAD antiseraum. Two clones reacted positively. One of them was shown to express a GAD activity which was specifically trapped on anti-GAD immunogel and was inhibited by gamma-acetylenic-GABA. Blot hybridization analysis of RNAs from rat brain revealed a single 4 kilobases band. Preliminary in situ hybridizations showed numerous cells labelled by the GAD probe such as the Purkinje and stellate cells in the cerebellar cortex and the cells of the reticular thalamic nucleus.

11/6/24 (Item 24 from file: 155) 04776099 83009099
Metabolic fate of 14C-labeled glutamate in astrocytes in primary cultures.

11/6/27 (Item 1 from file: 73) 8249051 | EMBASE No: 91272973
Postnatal expression of glutamate decarboxylases in developing rat cerebellum

11/6/28 (Item 2 from file: 73) 8243650 | EMBASE No: 91275001
Differential effect of functional olfactory bulb deafferentation on tyrosine hydroxylase and glutamic acid decarboxylase messenger RNA levels in rodent juxtaglomerular neurons

11/6/29 (Item 3 from file: 73) 8242627 | EMBASE No: 91273519
Effects of early in ovo administration of ethanol on expression of the GABAergic neuronal phenotype in the chick embryo

11/6/30 (Item 4 from file: 73) 8216682 | EMBASE No: 91244486
Short-term dopaminergic regulation of GABA release in dopamine deafferented caudate-pulamen is not directly associated with glutamic acid decarboxylase gene expression

11/6/31 (Item 5 from file: 73) 8183442 | EMBASE No: 91208802
Transplants of fetal substantia nigra regulate glutamic acid decarboxylase gene expression in host striatal neurons

11/6/32 (Item 6 from file: 73) 80567628 | EMBASE No: 91097549
Erratum: Ovarian steroid regulation of glutamic acid decarboxylase gene expression in individual hypothalamic nuclei (Journal of Neuroendocrinology, Volume 2, Number 4, pp 433-438)

11/6/33 (Item 7 from file: 73) 8011706 | EMBASE No: 91044156
Calcium binding protein (calbindin-D_{28k}) and glutamate decarboxylase gene expression after kindling induced seizures

11/6/34 (Item 8 from file: 73) 7896616 | EMBASE No: 90331903
Ovarian steroid regulation of glutamic acid decarboxylase gene expression in individual hypothalamic nuclei

11/6/35 (Item 9 from file: 73) 7717425 | EMBASE No: 9047076
Gene expression in striatal grafts. I. Cellular localization of neurotransmitter mRNAs

11/6/36 (Item 10 from file: 73) 7442458 | EMBASE No: 89164675
Visual experience regulates gene expression in the developing striate cortex

11/6/37 (Item 11 from file: 73) 5282899 | EMBASE No: 80033864
Metabolic fate of sup 1sup 4C-labeled glutamate in astrocytes in primary cultures

11/6/38 (Item 1 from file: 357) 1068336 | DBA Accession No.: 90-09527
Production of L-diamine using immobilized recombinant aspartate-beta-decarboxylase - *Pseudomonas dacuniae* gene cloning and expression in *Escherichia coli*; enzyme immobilization [conference abstract]

156/2 (Item 2 from file: 155) 07653228 91172228
Stiff-person syndrome: an autoimmune disease.

156/3 (Item 3 from file: 155) 07584325 91083325

Stiff-man syndrome: a GABAergic autoimmune disorder with autoantigenic heterogeneity.

156/4 (Item 4 from file: 155) 07463112 90370112

Identification of the 64K autoantigen in insulin-dependent diabetes as the GABA-synthesizing enzyme glutamic acid decarboxylase.

156/5 (Item 5 from file: 155) 07338057 90245057

Autoantibodies to GABAergic neurons and pancreatic beta cells in stiff-man syndrome.

156/6 (Item 6 from file: 155) 06936501 89238501

Plasmapheresis in the treatment of stiff-man syndrome [letter]

156/7 (Item 7 from file: 155) 06529951 88174951

Stiff-man syndrome—an autoimmune disease? [editorial]

156/8 (Item 8 from file: 155) 06529943 88174943

Autoantibodies to glutamic acid decarboxylase in a patient with stiff-man syndrome, epilepsy, and type I diabetes mellitus.

156/9 (Item 1 from file: 73) 8246135 EMBASE No: 91276539

Reactivity to human islets and fetal pig islets by peripheral blood mononuclear cells from subjects with preclinical and clinical insulin-dependent diabetes

156/10 (Item 2 from file: 73) 8244013 EMBASE No: 91275491

Autoimmunity to glutamic acid decarboxylase (GAD) in Stiff-Man syndrome and insulin-dependent diabetes mellitus

156/11 (Item 3 from file: 73) 8222296 EMBASE No: 91252356

Enzymes as targets for autoantibodies in human autoimmune disease: Relevance to pathogenesis?

156/12 (Item 4 from file: 73) 7886276 EMBASE No: 90321784

Identification of the 64K autoantigen in insulin-dependent diabetes as the GABA-synthesizing enzyme glutamic acid decarboxylase

18/7/2 (Item 1 from file: 73) 7886276 EMBASE No: 90321784

Identification of the 64K autoantigen in insulin-dependent diabetes as the GABA-synthesizing enzyme glutamic acid decarboxylase.

Baekkeskov S.; Aanstoet H.-J.; Christgau S.; Reetz A.; Solimena M.; Cascalho M.; Folli F.; Richter-Olesen H.; Camilli P.-D.
Department of Microbiology/Immunology, University of California San Francisco School of Medicine, San Francisco, CA 94143
USA

NATURE (United Kingdom), 1990, 347/6289 (15-156) CODEN: NATUA ISSN: 0028-0836 LANGUAGES: English
The pancreatic islet B-cell autoantigen of relative molecular mass 64,000 (64K), which is a major target of autoantibodies associated with the development of insulin-dependent diabetes mellitus (IDDM), has been identified as glutamic acid decarboxylase, the biosynthesizing enzyme of the inhibitory neurotransmitter GABA (gamma-aminobutyric acid). Pancreatic beta cells and a subpopulation of central nervous system neurons express high levels of this enzyme. Autoantibodies against glutamic acid decarboxylase with a higher titer and increased epitope recognition compared with those usually associated with IDDM are found in stiff-man syndrome, a rare neurological disorder characterized by a high coincidence with IDDM.

Folli F.; Richter-Olesen H.; Camilli PD
Department of Microbiology, University of California San Francisco School of Medicine 94143.
Nature Sep 13 1990, 347 (6289) p151-6, ISSN 0028-0836 Journal Code: NSC Languages: ENGLISH
The pancreatic islet beta-cell autoantigen of relative molecular mass 64,000 (64K), which is a major target of autoantibodies associated with the development of insulin-dependent diabetes mellitus (IDDM), has been identified as glutamic acid decarboxylase, the biosynthesizing enzyme of the inhibitory neurotransmitter GABA (gamma-aminobutyric acid). Pancreatic beta cells and a subpopulation of central nervous system neurons express high levels of this enzyme. Autoantibodies against glutamic acid decarboxylase with a higher titer and increased epitope recognition compared with those usually associated with IDDM are found in stiff-man syndrome, a rare neurological disorder characterized by a high coincidence with IDDM.